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10/810,408	03/26/2004	Min Chuin Hoo	15625US02	8918

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EXAMINER
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JOSEPH, JAISON

ART UNIT	PAPER NUMBER
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2611

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/810,408	Applicant(s) HOO ET AL.	
	Examiner JAISON JOSEPH	Art Unit 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 31 December 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-46 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-46 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### DETAILED ACTION

Applicant's arguments filed 12/31/2007 have been fully considered but they are not persuasive.

Regarding claim 1, Applicant argues "the Applicant maintains that Tanaka does not disclose or suggest at least the limitation of "determining a signal quality metric for a plurality of signal paths, wherein one or more of said plurality of signal paths is selected based on stored information related to preceding frames," as recited by the Applicant in independent claim 1." However Examiner respectfully disagrees. Tanaka teaches in figure 4, the antenna switching is done based on signal strength determination (i.e. signal quality metric (RSSI which is based on bit error rate (BER) (see column 5, lines 30 – 35)) (see column 6, lines 9 – 25). Tanaka further teaches determining the bit error rate "requires detection of plurality of frames" (see column 7, lines 57 – 60). Which clearly teaches that in order to determine BER, bit error rate measuring unit must know the information related to preceding frames. Therefore Tanaka clearly teaches the cited limitation of "determining a signal quality metric for a plurality of signal paths, wherein one or more of said plurality of signal paths is selected based on stored information related to preceding frames,". Thus Tanaka teaches all cited limitations. Therefore Examiner maintains the rejection of claim 1.

Regarding claim 8 and 15, the Applicant make same argument as the argument applied to claim 1, Therefore the same response applied to the argument with respect to claim 1 above is also applied here. Therefore Examiner maintains the rejection of claims 8 and 15.

Regarding claim 2-7, 16-24, and 28-30, the Applicant make same argument as the argument applied to claim 1, Therefore the same response applied to the argument with respect to claim 1 above is also applied here. Therefore Examiner maintains the rejection of claims 2-7, 16-24, and 28-30.

Regarding claim 8-14 and 25-27, for the same reasons as stated above, the combination of AAPA in view of over Tanaka in view of Koerner teach all cited limitations. Therefore Examiner maintains the rejection of claims 8-14 and 25-27. Applicant is reminded that Examiner is entitled to give broadest reasonable interpretation to the language of the claims.

### ***Claim Objections***

Claims 1 – 30 are objected to because of the following informalities:

Claim 1, line 8 recite the limitation" ignoring a signal path" should have been "discarding a signal path" to be consistent with present specification.

Similar scenario exists in claim 8, line 10 and claim 15, line 8. Appropriate correction is required.

Claims 2 – 7, 9 – 14, 16 – 30 are inherently objected as being depended on above objected claims.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 – 7, 15 – 21 and 22 – 27 are rejected under 35 U.S.C. 102(e) as being anticipated by Tanaka (US Patent 7,245,678 B2).

Regarding claim 1, Tanaka teaches a method for processing signals in a communication system, the method comprising: determining a signal quality metric for each of a plurality of signal paths, wherein one or more of said plurality of signal paths is selected based on stored information for preceding frames (see figure 1, 2, 3 and abstract and column 7, lines 3 – 20 and column 7, lines 55 – 65); assigning a threshold signal quality metric for the plurality of signal paths (see figure 1, 2, 3 and abstract; and discarding a signal path from the plurality of signal paths , if the determined signal quality metric for the signal path does not satisfy the threshold signal quality metric (see figure 1, 2, 3 and abstract column 7, lines 3 – 20 and column 7, lines 55 – 65).

Regarding claim 2, which inherits the limitations of claim 1, Tanaka further teaches assigning a different threshold signal quality metric for each of the plurality of signal paths (see figure 1, 2, 3 and abstract and column 5, lines 16 - 20 and column 7, lines 55 – 65).

Regarding claim 3, which inherits the limitations of claim 1, Tanaka further teaches assigning a fixed threshold signal quality metric for each of the plurality of signal paths (see figure 4 step s 16, comparing with a fixed threshold).

Regarding claim 4, which inherits the limitations of claim 1, Tanaka further teaches dynamically changing the threshold signal quality metric for each of the plurality of signal paths (see figure 1, 2, 3 and abstract and column 7, lines 3 – 20 and column 7, lines 55 – 65)

Regarding claim 5, which inherits the limitations of claim 1, Tanaka further teaches wherein the signal quality metric comprises at least one of a power level characteristic, a packet error rate characteristic, a bit error rate characteristic, a propagation channel characteristic, and an interference level characteristic (see figure 1, 2, 3 and abstract and column 7, lines 3 – 20 and column 7, lines 55 – 65)

Regarding claim 6, which inherits the limitations of claim 1, Tanaka further teaches wherein at least one of the signal paths comprises an antenna (see figure 1, 2, 3 and abstract and column 5, lines 16 - 20 and column 7, lines 55 – 65).

Regarding claim 7, which inherits the limitations of claim 1, Tanaka further teaches wherein each of the plurality of signal paths comprises at least one of a receive signal path and a transmit signal path (see figure 1, 2, 3 and abstract and column 5, lines 16 - 20 and column 7, lines 55 – 65).

Regarding claim 15, the claimed system including the features that corresponds with subject matter mentioned above in the rejection of claim 1 is applicable hereto.

Regarding claim 16, which inherits the limitations of claim 15, the claimed system including the features that corresponds with subject matter mentioned above in the rejection of claim 2 is applicable hereto.

Regarding claim 17, which inherits the limitations of claim 15, the claimed system including the features that corresponds with subject matter mentioned above in the rejection of claim 3 is applicable hereto.

Regarding claim 18, which inherits the limitations of claim 15, the claimed system including the features that corresponds with subject matter mentioned above in the rejection of claim 4 is applicable hereto.

Regarding claim 19, which inherits the limitations of claim 15, the claimed system including the features that corresponds with subject matter mentioned above in the rejection of claim 5 is applicable hereto.

Regarding claim 20, which inherits the limitations of claim 15, the claimed system including the features that corresponds with subject matter mentioned above in the rejection of claim 6 is applicable hereto.

Regarding claim 21, which inherits the limitations of claim 15, the claimed system including the features that corresponds with subject matter mentioned above in the rejection of claim 7 is applicable hereto.

Regarding claim 22, which inherits the limitations of claim 1, Tanaka further teaches the method further comprising selecting a first of said plurality of signal paths based on said previously stored information for preceding frames (see figure 1, 2, 3, and 4 and abstract and column 5, lines 16 - 20 and column 7, lines 55 – 65).

Regarding claim 23, which inherits the limitations of claim 1, Tanaka further teaches the method further comprising selecting one or more of said plurality of signal

paths based on a history of previously selected signal paths (see figure 1, 2, 3, and 4 and abstract and column 5, lines 16 - 20 and column 7, lines 55 – 65).

Regarding claim 24, which inherits the limitation of claim 1, Tanaka further teaches the method further comprising controlling a gain of a selected one of said plurality of signal paths based on a power coupling factor between said selected one of said plurality of signal paths and a signal path adjacent to said selected one of said plurality of signal path (see figure 1, 2, 3, and 4 and abstract and column 5, lines 16 - 20 and column 7, lines 55 – 65).

Regarding claim 25, which inherits the limitations of claim 15, the claimed system including the features that corresponds with subject matter mentioned above in the rejection of claim 22 is applicable hereto.

Regarding claim 26, which inherits the limitations of claim 15, the claimed system including the features that corresponds with subject matter mentioned above in the rejection of claim 23 is applicable hereto.

Regarding claim 27, which inherits the limitations of claim 15, the claimed system including the features that corresponds with subject matter mentioned above in the rejection of claim 24 is applicable hereto.

Regarding claim 31, the claimed system including the features that corresponds with subject matter mentioned above in the rejection of claim 1 is applicable hereto. Tanaka further teach selecting a target signal path from said plurality of signal paths, for receiving the signals, based on said determined signal quality metric for said plurality of



signal paths and said threshold signal quality metric (see figure 1, 2, 3 and abstract column 7, lines 3 – 20 and column 7, lines 55 – 65).

Regarding claim 32, which inherits the limitations of claim 31, the claimed system including the features that corresponds with subject matter mentioned above in the rejection of claim 1 is applicable hereto.

Regarding claim 33, which inherits the limitations of claim 31, the claimed system including the features that corresponds with subject matter mentioned above in the rejection of claim 2 is applicable hereto.

Regarding claim 34, which inherits the limitations of claim 31, the claimed system including the features that corresponds with subject matter mentioned above in the rejection of claim 3 is applicable hereto.

Regarding claim 35, which inherits the limitations of claim 31, the claimed system including the features that corresponds with subject matter mentioned above in the rejection of claim 4 is applicable hereto.

Regarding claim 36, which inherits the limitations of claim 31, the claimed system including the features that corresponds with subject matter mentioned above in the rejection of claim 5 is applicable hereto.

Regarding claim 37, which inherits the limitations of claim 31, the claimed system including the features that corresponds with subject matter mentioned above in the rejection of claim 6 is applicable hereto.

Regarding claim 38, which inherits the limitations of claim 31, the claimed system including the features that corresponds with subject matter mentioned above in the rejection of claim 7 is applicable hereto.

Regarding claim 39, the claimed system including the features that corresponds with subject matter mentioned above in the rejection of claim 33 is applicable hereto.

Regarding claim 40, which inherits the limitations of claim 39, the claimed system including the features that corresponds with subject matter mentioned above in the rejection of claim 1 is applicable hereto.

Regarding claim 41, which inherits the limitations of claim 39, the claimed system including the features that corresponds with subject matter mentioned above in the rejection of claim 2 is applicable hereto.

Regarding claim 42, which inherits the limitations of claim 39, the claimed system including the features that corresponds with subject matter mentioned above in the rejection of claim 3 is applicable hereto.

Regarding claim 43, which inherits the limitations of claim 39, the claimed system including the features that corresponds with subject matter mentioned above in the rejection of claim 4 is applicable hereto.

Regarding claim 44, which inherits the limitations of claim 39, the claimed system including the features that corresponds with subject matter mentioned above in the rejection of claim 5 is applicable hereto.

Regarding claim 45, which inherits the limitations of claim 39, the claimed system including the features that corresponds with subject matter mentioned above in the rejection of claim 6 is applicable hereto.

Regarding claim 46, which inherits the limitations of claim 39, the claimed system including the features that corresponds with subject matter mentioned above in the rejection of claim 7 is applicable hereto.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8 – 14 and 28 - 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka (US Patent 7,245,678 B2) in view of Koerner (US Patent 7,049,933).

Regarding claim 8 – 14 and 28 - 30, Tanaka is cited as explained in the above paragraph. Tanaka does not expressly teach the antenna selecting functions is done by a Machine-readable medium having stored instructions stored thereon to perform the cited functions. However, Koerner teach a Machine-readable medium having stored instructions stored thereon to perform selecting at least one signal path (see column 15, lines 39 – 57). Therefore it would be obvious to an ordinary skilled in the art at the time

the invention was made to perform Tanaka's method in a machine-readable medium.

The motivation or suggestion to do so is to reduce the cost of the receiver.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAISON JOSEPH whose telephone number is (571)272-6041. The examiner can normally be reached on M-F 9:30 - 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on (571) 272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jaison Joseph/  
Examiner, Art Unit 2611

  
CHIEH M. FAN  
SUPERVISORY PATENT EXAMINER